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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Yoshikazu Ishii

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EXAMINER

LI, SHI K

ART UNIT

PAPER NUMBER

2633

DATE MAILED: 09/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/854,558

Applicant(s)

ISHII, YOSHIKAZU

Examiner

Shi K. Li

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
4a) Of the above claim(s) 3-5, 8-10, 13-15, 18-20, 23-25 and 28-30 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1, 2, 6, 7, 11, 12, 16, 17, 21, 22, 26 and 27 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 15 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

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DETAILED ACTION

Election/Restrictions

1. Applicant's election of species I, corresponding to FIGs. 1, 3, 8 and 12, in the reply filed on 30 June 2004 is acknowledged. Claims 1, 2, 6 and 7 are readable on species I. Applicant argues that claims 11, 12, 16, 17, 21, 22, 26 and 27, readable on species IV, are combination claims whereas claims 1, 2, 6 and 7 are sub-combination claims. The argument is persuasive and claims 11, 12, 16, 17, 21, 22, 26 and 27 are examined. Claims 3-5, 8-10, 13-15, 18-20, 23-25, 28-30 are withdrawn from further consideration, until allowance of a generic claim, as being drawn to a nonelected species and are not combination claims with claims 1, 2, 6 and 7 as sub-combination. The election requirement is made final.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-2 and 6-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Sutton, Jr. (U.S. Patent 3,569,869).

Regarding claim 1, Sutton, Jr. discloses in FIG. 1 an equalizer 12 comprising resonance circuit including inductor 26, capacitor 28 and variable resistor 30. Sutton, Jr. teaches in col. 4, lines 45-47 that the response characteristic (Q value) can be adjusted by varying the resistor 30.

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Regarding claim 2, Sutton, Jr. includes in FIG. 1 variable capacitor 24 for adjusting the resonance frequency.

Regarding claims 6 and 7, Sutton, Jr. includes in FIG. 1 a plurality of equalizer network 12.

4. Claims 1-2 are rejected under 35 U.S.C. 102(e) as being anticipated by Pidgeon, Jr. (U.S. Patent 6,204,718 B1).

Regarding claim 1, Pidgeon, Jr. teaches in FIG. 5 a predistorter 400 (equivalent to equalizer of instant claim) for correcting the non-linearity of a laser. FIG. 5 comprises an inductor L3, a capacitor C4 and a variable resistor R6.

Regarding claim 2, Pidgeon, Jr. teaches in FIG. 5 variable capacitor C4.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hamada (JP Patent JP403003411A, provided in IDS).

Hamada discloses in FIG. 1 a delay equalizer comprising a resonance circuit including inductor L1, capacitor C11 and resistor R30. The difference between Hamada and the claimed invention is that R30 is not a variable resistor. However Hamada teaches in FIG. 2(II) that amplitude characteristic (Q value) can be compensated by adjusting the resistor R30 (see Constitution section). One of ordinary skill would have been motivated to use a variable resistor

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to replace R30 of FIG. 1 because a variable resistor allows adjusting the Q value while the circuit is in operation or using controller to obtain optimal result in real time. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a variable resistor, as taught by Hamada itself, in the delay equalizer of FIG. 1 of Hamada because a variable resistor allows adjusting the Q value while the circuit is in operation or using controller to obtain optimal result in real time.

7. Claims 11-12, 16-17, 21-22 and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over admission (admitted prior art) in view of Pidgeon, Jr. (U.S. Patent 6,204,718 B1).

Regarding claim 11, FIG. 19 (related art) of instant application discloses an optical transmitter comprising a frequency modulating means 1 and an optical modulating means 3. The difference between admission and the claimed invention is that admission does not include a delay equalizer. Pidgeon, Jr. teaches in FIG. 5 a predistorter 400 (equivalent to equalizer of instant claim) for correcting the non-linearity of a laser. The predistorter of Pidgeon, Jr. comprises an inductor L3, a capacitor C4 and a variable resistor R6. One of ordinary skill in the art would have been motivated to combine the teaching of Pidgeon, Jr. with admission because a predistorter compensates non-linearity of a laser and reduces distortion. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a equalizer, as taught by Pidgeon, Jr., in the optical transmitter of admission because a predistorter compensates non-linearity of a laser and reduces distortion.

Regarding claim 12, Pidgeon, Jr. teaches in FIG. 5 to use variable capacitor C4.

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Regarding claims 16 and 17, Pidgeon, Jr. teaches in FIG. 5 to include another predistortion circuit 250. Pidgeon, Jr. teaches in FIG. 2(a) an example of predistortion circuit 250. However it is obvious to one of ordinary skill in the art to use the predistortion circuit 400 to replace predistortion circuit 250 because predistortion circuit 400 gives better tuning of the characteristics of the transfer function via variable resistor and variable capacitor.

Regarding claims 21 and 22, FIG. 19 of admission further includes optical receiver 6 and frequency demodulator 7.

Regarding claims 26 and 27, Pidgeon, Jr. teaches in FIG. 5 to include another predistortion circuit 250. Pidgeon, Jr. teaches in FIG. 2(a) an example of predistortion circuit 250. However it is obvious to one of ordinary skill in the art to use the predistortion circuit 400 to replace predistortion circuit 250 because predistortion circuit 400 gives better tuning of the characteristics of the transfer function via variable resistor and variable capacitor.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hoang et al. (U.S. Patent 6,549,087 B1) discloses in FIG. 2 a general structure of a variable equalizer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shi K. Li whose telephone number is 571 272-3031. The examiner can normally be reached on Monday-Friday (8:30 a.m. - 5:00 p.m.).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

skl


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